WHAT IS CLAIMED IS:

1. A medicinal aerosol solution formulation, comprising:
   (a) a biocompatible polymer substantially completely dissolved in the formulation; the biocompatible polymer comprising at least one chain of units of the formula $-[X-R^1-C(O)]-$ wherein:
      (i) each R^1 is an independently selected organic group that links the -X- group to the carbonyl group; and
      (ii) each X is independently oxygen, sulfur, or catenary nitrogen;
   (b) a propellant; and
   (c) a drug substantially completely dissolved in the formulation in a therapeutically effective amount.

2. The formulation of claim 1, wherein the formulation is suitable for nasal and/or oral inhalation.

3. The formulation of claim 2 wherein each X is independently oxygen or catenary nitrogen.

4. The formulation of claim 3 wherein each X is oxygen.

5. The formulation of claim 4 wherein the biocompatible polymer is biodegradable.

6. The formulation of claim 1 wherein the biocompatible polymer is biodegradable.

7. The formulation of claim 6 wherein the biodegradable polymer has a number-average molecular weight of no greater than about 1500.

8. The formulation of claim 7 wherein the biodegradable polymer has a number-average molecular weight of no greater than about 1200.

9. The formulation of claim 7 wherein the biodegradable polymer has a number-average molecular weight of no greater than about 800.

10. The formulation of claim 7 wherein the biodegradable polymer has a number-average molecular weight of between 350 and 1500.

11. The formulation of claim 1 wherein the biocompatible polymer is capped on at least one end by a group that contains at least one hydrogen atom capable of hydrogen bonding.

12. The formulation of claim 1 wherein the biocompatible polymer is capped on at least one end by an ionic group.

13. The formulation of claim 1 wherein the biocompatible polymer is capped on at least one end by a group that contains no hydrogen atoms capable of hydrogen bonding.

14. The formulation of claim 13 wherein the biocompatible polymer is capped on at least one end by an organocarbonyl group.

15. The formulation of claim 14 wherein the biocompatible polymer is capped on at least one end by an acetyl group.

16. The formulation of claim 1 wherein the biocompatible polymer has a polydispersity of less than about 1.8.

17. The formulation of claim 1 wherein the biocompatible polymer has a polydispersity of less than about 1.4.

18. The formulation of claim 1 wherein the biocompatible polymer has a polydispersity of less than about 1.2.

19. The formulation of claim 18 wherein the biocompatible polymer has a number-average molecular weight of no greater than about 1500.

20. The formulation of claim 17 wherein the biocompatible polymer has a number-average molecular weight of no greater than about 1200.

21. The formulation of claim 16 wherein the biocompatible polymer has a number-average molecular weight of no greater than about 800.

22. The formulation of claim 1 further comprising a cosolvent.

23. The formulation of claim 22 wherein the cosolvent is selected from the group consisting of ethanol, isopropanol, acetone, ethyl lactate, dimethyl ether, menthol, tetrahydrofuran, and ethyl acetate.

24. The formulation of claim 23 wherein the cosolvent is ethanol.

25. The formulation of claim 1 wherein each R^1 is a straight chain, branched chain, or cyclic organic group containing 1-6 carbon atoms optionally containing carbonyl groups, oxygen atoms, thiol groups, or catenary nitrogen atoms.

26. The formulation of claim 25 wherein each R^1 is a straight chain alkylene or alkenylene group containing 1-6 carbon atoms optionally containing carbonyl groups, oxygen atoms, thiol groups, or fully substituted catenary nitrogen atoms, wherein the nitrogen substituents are free of nucleophilic or hydrogen-donor hydrogen bonding functional groups.

27. The formulation of claim 1 wherein the biocompatible polymer chain comprises units derived from one or more precursor hydroxyacids.

28. The formulation of claim 27 wherein the biocompatible polymer chain comprises units derived from one or more α-hydroxyacids.

29. The formulation of claim 27 wherein the biocompatible polymer chain comprises units derived from one or more precursors selected from the group consisting of glycolic acid, trimethylene carbonate, hydroxybutyric acids, p-dioxanone, L-lactic acid, and D-lactic acid.

30. The formulation of claim 29 wherein the biocompatible polymer chain comprises units derived from lactic acid and has an average chain length of about 3-25 of said units.

31. The formulation of claim 30 wherein the biocompatible polymer chain comprises units derived from lactic acid and has an average chain length of about 5-16 of said units.

32. The formulation of claim 1 wherein the biocompatible polymer has an average chain length of no greater than about 70 of said units.

33. The formulation of claim 1 wherein the biocompatible polymer has an average chain length of about 3-25 of said units.

34. The formulation of claim 1 wherein the formulation comprises about 0.01-25 parts by weight of the biocompatible polymer based on 100 parts of the formulation.

35. The formulation of claim 1 wherein the propellant comprises a chlorofluorocarbon, a hydrochlorofluorocarbon, a hydrofluorocarbon, or a mixture thereof.

36. The formulation of claim 35 wherein the propellant comprises 1,1,1,2-tetrafluoroethane, 1,1,1,2,3,3,3-heptafluoropropane, or a mixture thereof.

37. The formulation of claim 1 wherein the drug is selected from the group consisting of antiallergics, analgesics, bronchodilators, antihistamines, antiviral agents, antibiotics, anti-inflammatories, immunomodulators, peptides, and steroids.

38. The formulation of claim 2 wherein the drug is selected from the group consisting of adrenaline, albuterol, atropine, beclomethasone dipropionate, budesonide, butixocort propionate, clemastine, cromolyn, epinephrine, ephedrine, fentanyl, flunisolide, fluticasone, formoterol, ipratropium bromide, isoproterenol, lidocaine, morphine, nedocromil, pentamidine isoethionate, pirbuterol, prednisolone, salmeterol, terbutaline, tetracycline, 4-amino-α,α,2-trimethyl-1H-imidazo[4,5-c]quinoline-1-ethanol, 2,5-diethyl-10-oxo-1,2,4-triazolo[1,5-c]pyrimido[5,4-b][1,4]thiazine, 1-(1-ethylpropyl)-1-hydroxy-3-phenylurea, and pharmaceutically acceptable salts and solvates thereof, and mixtures thereof.

39. The formulation of claim 2 in an aerosol canister equipped with a metered dose valve.

40. The formulation of claim 1 wherein the drug exhibits increased solubility in the propellant due to the biocompatible polymer.

41. The formulation of claim 1 wherein the drug exhibits increased chemical stability due to the biocompatible polymer.

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42. A sustained release medicinal formulation comprising:

(a) a propellant;

(b) a therapeutically effective amount of a drug; and

(c) a sufficient amount of a biocompatible polymer substantially completely dissolved in the formulation so as to provide for sustained release of the drug;

wherein the sustained release formulation results in discrete, nonfilm forming particles upon delivery.

43. The sustained release medicinal formulation of claim 42 wherein the formulation is suitable for nasal and/or oral inhalation.

44. The sustained release formulation of claim 43, wherein the biocompatible polymer is present in an amount of greater than 1 part by weight based on 100 parts of the formulation.

45. The sustained release formulation of claim 44 wherein the drug is dispersed in the formulation as a micronized suspension.

46. The sustained release formulation of claim 42 wherein the drug is substantially completely dissolved in the formulation.

47. The sustained release formulation of claim 42 wherein the biocompatible polymer is present in an amount such that the period of therapeutic activity of the drug is increased by a factor of at least about 1.5 relative to the period of activity of the same formulation with respect to the propellant and drug but without the biocompatible polymer.

48. The sustained release formulation of claim 42 wherein the biocompatible polymer is present in an amount such that the period of therapeutic activity of the drug is increased by at least about 30 minutes relative to the period of activity of the same formulation with respect to the propellant and drug but without the biocompatible polymer.

49. The sustained release formulation of claim 42 wherein the biocompatible polymer is present in an amount of no greater than about 25 parts by weight based on 100 parts of the formulation.

50. The sustained release formulation of claim 46 wherein the biocompatible polymer is present in an amount ranging from 0.01 to 10 parts by weight based on 100 parts of the formulation.

51. The sustained release formulation of claim 42 wherein the biocompatible polymer contains amide groups, ester groups, or mixtures thereof.

52. The sustained release formulation of claim 42 wherein the biocompatible polymer has a number-average molecular weight of no greater than about 5000.

53. The sustained release formulation of claim 42 wherein the biocompatible polymer is a condensation polymer.

54. The sustained release formulation of claim 42 wherein the biocompatible polymer comprises at least one chain of units of the formula
-[X-R^1-C(O)]- wherein:

(a) each R^1 is an independently selected organic group that links the X group to the carbonyl group; and

(b) each X is independently oxygen, sulfur, or catenary nitrogen.

55. The sustained release formulation of claim 54 wherein each X is independently oxygen or catenary nitrogen.

56. The sustained release formulation of claim 54 wherein each R^1 is a straight chain, branched chain, or cyclic organic group containing 1-6 carbon atoms optionally

containing carbonyl groups, oxygen atoms, thiol groups, or catenary nitrogen atoms.

57. The sustained release formulation of claim 54 wherein the biocompatible polymer chain comprises units derived from one or more precursor hydroxyacids.

58. The sustained release formulation of claim 54 wherein the biocompatible polymer chain comprises units derived from precursors selected from the group consisting of glycolic acid, trimethylene carbonate, hydroxybutyric acids, p-dioxanone, and lactic acids.

59. The sustained release formulation of claim 54 wherein the biocompatible polymer chain comprises units derived from precursors selected from the group consisting of alpha-hydroxycarboxylic acids and beta-hydroxycarboxylic acids.

60. The sustained release formulation of claim 59 wherein the biocompatible polymer chain comprises units derived from alpha-hydroxycarboxylic acid precursors.

61. The sustained release formulation of claim 54 wherein the biocompatible polymer has an average chain length of no greater than about 70 of said units.

62. The sustained release formulation of claim 61 wherein the biocompatible polymer has an average chain length of no greater than about 25 of said units.

63. The sustained release formulation of claim 62 wherein the biocompatible polymer has an average chain length of no greater than about 16 of said units.

64. The sustained release formulation of claim 63 wherein the biocompatible polymer has an average chain length of no greater than about 11 of said units.

65. The sustained release formulation of claim 61 wherein the biocompatible polymer has an average chain length of at least about 5 of said units.

66. The sustained release formulation of claim 65 wherein the biocompatible polymer has an average chain length of at least about 8 of said units.

67. The sustained release formulation of claim 54 wherein the biocompatible polymer is biodegradable.

68. The sustained release formulation of claim 67 wherein the biodegradable polymer has a biological half-life of less than about 10 days.

69. The sustained release formulation of claim 54 wherein the biocompatible polymer has a number-average molecular weight of no greater than about 5000.

70. The sustained release formulation of claim 69 wherein the biocompatible polymer has a number-average molecular weight of no greater than about 1800.

71. The sustained release formulation of claim 70 wherein the biocompatible polymer has a number-average molecular weight of no greater than about 1200.

72. The sustained release formulation of claim 69 wherein the biocompatible polymer has a polydispersity of less than about 1.4.

73. The sustained release formulation of claim 70 wherein the biocompatible polymer has a polydispersity of less than about 1.2.

74. The sustained release formulation of claim 54 further comprising a cosolvent.

75. The sustained release medicinal formulation of claim 74 wherein the cosolvent is selected from the group consisting of ethanol, isopropanol, acetone, ethyl lactate, dimethyl ether, tetrahydrofuran, and ethyl acetate.

76. The sustained release formulation of claim 54 wherein the propellant comprises a chlorofluorocarbon, a hydrochlorofluorocarbon, a hydrofluorocarbon, carbon dioxide, dimethyl ether, butane, propane, or a mixture thereof.

77. The sustained release formulation of claim 54 wherein the drug is selected from the group consisting of antiallergics, analgesics, bronchodilators, antihistamines, antiviral agents, antibiotics, anti-inflammatories, immunomodulators, peptides, and steroids.

78. The sustained release formulation of claim 54 wherein the drug is selected from the group consisting of adrenaline, albuterol, atropine, beclomethasone dipropionate, budesonide, butixocort propionate, clemastine, cromolyn, epinephrine, ephedrine, fentanyl, flunisolide, fluticasone, formoterol, ipratropium bromide, isoproterenol, lidocaine, morphine, nedocromil, pentamidine isoethionate, pirbuterol, prednisolone, salmeterol, terbutaline, tetracycline, 4-amino-α,α,2-trimethyl-1H-imidazo[4,5-c]quinoline-1-ethanol, 2,5-diethyl-10-oxo-1,2,4-triazolo[1,5-c]pyrimido[5,4-b][1,4]thiazine, 1-(1-ethylpropyl)-1-hydroxy-3-phenylurea, and pharmaceutically acceptable salts and solvates thereof, and mixtures thereof.

79. The sustained release formulation of claim 54 wherein the biocompatible polymer is present in at least about a 4:1 ratio by weight of biocompatible polymer to drug, and the drug is present as a micronized suspension.

80. The sustained release formulation of claim 79 wherein the biocompatible polymer is present in at least about a 8:1 ratio by weight of biocompatible polymer to drug, and the drug is present as a micronized suspension.

81. The sustained release formulation of claim 54 wherein the biocompatible polymer is present in an amount of from about 1:1 to about 100:1 ratio by weight of biocompatible polymer to drug, and the drug is substantially completely dissolved in the formulation.

82. The sustained release formulation of claim 81 wherein the biocompatible polymer is present in an amount of from about 2:1 to about 30:1 ratio by weight of biocompatible polymer to drug, and the drug is substantially completely dissolved in the formulation.

83. The sustained release formulation of claim 54 wherein the period of therapeutic activity is extended by at least about 6 hours.

84. The sustained release formulation of claim 54 wherein the biocompatible polymer has a molecular weight polydispersity of no greater than about 1.8.

85. The sustained release formulation of claim 54 wherein the biocompatible polymer has a molecular weight polydispersity of no greater than about 1.4.

86. The sustained release formulation of claim 54 wherein the biocompatible polymer has a molecular weight polydispersity of no greater than about 1.2.

87. The sustained release formulation of claim 54 in an aerosol canister equipped with a metered dose valve.

88. A metered dose inhaler for delivering a sustained release medicinal formulation comprising:

an aerosol canister equipped with a metered dose valve and containing a sustained release medicinal aerosol formulation suitable for nasal and/or oral inhalation including a propellant, a drug in a therapeutically effective amount, and a biodegradable polymer substantially completely dissolved in the formulation in an amount such that the period of therapeutic activity of the drug when delivered is extended relative to the same formulation without the biodegradable polymer, said biodegradable polymer comprising at least one chain of units of the formula -[X-R^1-C(O)]- wherein:

(i) each R^1 is an independently selected organic group that links the X group to the carbonyl group; and

(ii) each X is independently oxygen, sulfur, or catenary nitrogen.

89. The metered dose inhaler of claim 88 wherein the propellant includes a hydrofluorocarbon.

90. The metered dose inhaler of claim 89 wherein the propellant is selected from the group consisting essentially of 1,1,1,2-tetrafluoroethane, 1,1,1,2,3,3,3-heptafluoropropane, and mixtures thereof.

91. The metered dose inhaler of claim 88 wherein the drug is selected from the group consisting of antiallergics, analgesics, bronchodilators, antihistamines, antiviral agents, antibiotics, anti-inflammatories, immunomodulators, peptides, and steroids.

92. The metered dose inhaler of claim 88 wherein the drug is selected from the group consisting essentially of adrenaline, albuterol, atropine, beclomethasone dipropionate, budesonide, butixocort propionate, clemastine, cromolyn, epinephrine, ephedrine, fentanyl, flunisolide, fluticasone, formoterol, ipratropium bromide, isoproterenol, lidocaine, morphine, nedocromil, pentamidine isoethionate, pirbuterol, prednisolone, salmeterol, terbutaline, tetracycline, 4-

amino-α,α,-trimethyl-1H-imidazo[4,5-c]quinoline-1-ethanol, 2,5-diethyl-10-oxo-1,2,4-triazolo[1,5-c]pyrimido[5,4-b][1,4]thiazine, 1-(1-ethylpropyl)-1-hydroxy-3-phenylurea, and pharmaceutically acceptable salts and solvates thereof, and mixtures thereof.

93. The metered dose inhaler of claim 88 wherein the drug is present in an amount of from about 0.02 parts to about 2 parts by weight based on 100 parts of the formulation.

94. The metered dose inhaler of claim 88 wherein the drug is substantially completely dissolved in the formulation.

95. The metered dose inhaler of claim 88 wherein the drug is in the form of a micronized suspension in the formulation.

96. The metered dose inhaler of claim 88 wherein the biodegradable polymer substantially biodegrades over a period of about 24 hours.

97. The metered dose inhaler of claim 88 wherein the biodegradable polymer substantially biodegrades over a period of about 12 hours.

98. The metered dose inhaler of claim 88 wherein the biodegradable polymer has a biological half-life of less than about 12 hours.

99. The metered dose inhaler of claim 88 wherein the biodegradable polymer has a biological half-life of less than about 6 hours.

100. The metered dose inhaler of claim 88 wherein the biocompatible polymer is present in an amount such that the period of therapeutic activity of the drug is increased by a factor of at least about 1.5 relative to the period of activity of the

same formulation with respect to the propellant and drug but without the biocompatible polymer.

101. The metered dose inhaler of claim 88 wherein the biocompatible polymer is present in an amount such that the period of therapeutic activity of the drug is increased by at least about 30 minutes relative to the period of activity of the same formulation with respect to the propellant and drug but without the biocompatible polymer.

102. The metered dose inhaler of claim 88 wherein the biocompatible polymer is present in an amount such that the period of therapeutic activity of the drug is increased by at least about 6 hours relative to the period of activity of the same formulation with respect to the propellant and drug but without the biocompatible polymer.

103. The metered dose inhaler of claim 88 wherein each X is oxygen or catenary nitrogen.

104. The metered dose inhaler of claim 103 wherein X is at least 50% oxygen.

105. The metered dose inhaler of claim 104 wherein X is oxygen.

106. The metered dose inhaler of claim 88 wherein the biocompatible polymer has a number-average molecular weight of no greater than about 5000.

107. The metered dose inhaler of claim 88 wherein the biocompatible polymer has a number-average molecular weight of no greater than about 1800.

108. The metered dose inhaler of claim 88 wherein the biocompatible polymer has a number-average molecular weight of no greater than about 1200.

109. The metered dose inhaler of claim 108 wherein the biocompatible polymer has a number-average molecular weight of no greater than about 800.

110. The metered dose inhaler of claim 88 wherein the biocompatible polymer has a number-average molecular weight greater than about 600.

111. The metered dose inhaler of claim 88 wherein the biocompatible polymer has a polydispersity of less than about 1.8.

112. The metered dose inhaler of claim 88 wherein the biocompatible polymer has a polydispersity of less than about 1.4.

113. The metered dose inhaler of claim 88 wherein the biocompatible polymer has a polydispersity of less than about 1.2.

114. The metered dose inhaler of claim 88 wherein the biodegradable polymer comprises units derived from precursors selected from the group consisting of glycolic acid, trimethylene carbonate, hydroxybutyric acids, p-dioxanone, and lactic acids.

115. The metered dose inhaler of claim 88 wherein the biodegradable polymer comprises units derived from precursors selected from the group consisting of glycolic acid, L-lactic acid, and D-lactic acid.

116. The metered dose inhaler of claim 88 wherein the biodegradable polymer comprises units derived from L-lactic acid.

117. The metered dose inhaler of claim 108 wherein the biodegradable polymer has a polydispersity of less than about 1.2.

118. The metered dose inhaler of claim 88 further comprising a cosolvent.

119. The metered dose inhaler of claim 118 wherein the cosolvent is selected from the group consisting of ethanol, isopropanol, acetone, ethyl lactate, dimethyl ether, tetrahydrofuran, and ethyl acetate.

120. The metered dose inhaler of claim 88 wherein the biodegradable polymer and drug form a salt.

121. A biodegradable medicinal composition comprising:
a therapeutically effective amount of a drug; and
a biodegradable polymer comprising at least one chain of units of the formula -[O-R^1-C(O)]- wherein:
(a) each R^1 is an independently selected organic group that links the -O- atom to the carbonyl group; and
(b) the polymer has a number-average molecular weight of no greater than about 1800, and a polydispersity of less than about 1.2.

122. The medicinal composition of claim 121 wherein the biodegradable polymer has a number-average molecular weight of no greater than about 1500.

123. The medicinal composition of claim 121 wherein the biodegradable polymer has a polydispersity of less than about 1.15.

124. The medicinal composition of claim 121 wherein the biodegradable polymer has a number-average molecular weight of at least about 700.

125. The medicinal composition of claim 121 wherein each R^1 is the same.

126. The medicinal composition of claim 121 which has a glass transition temperature above about 23°C.

127. The medicinal composition of claim 126 wherein the biodegradable polymer has a chain length of about 10-16 of said units.

128. The medicinal composition of claim 121 wherein the biodegradable polymer has a biological half-life of less than about 10 days.

129. The medicinal composition of claim 121 wherein the biodegradable polymer has a biological half-life of less than about 4 days.

130. The medicinal composition of claim 121 wherein the biodegradable polymer has a number-average molecular weight of no greater than about 1200.

131. The medicinal composition of claim 121 wherein the biodegradable polymer comprises units derived from one or more precursor hydroxyacids.

132. The medicinal composition of claim 131 comprising units derived from precursors selected from the group consisting of alpha-hydroxycarboxylic acids and beta-hydroxycarboxylic acids.

133. The medicinal composition of claim 132 comprising units derived from alpha-hydroxycarboxylic acids.

134. The medicinal composition of claim 121 wherein the biodegradable polymer comprises units derived from precursors selected from the group consisting of glycolic acid, trimethylene carbonate, hydroxybutyric acids, p-dioxanone, and lactic acids.

135. The medicinal composition of claim 134 comprising units derived from precursors selected from the group consisting of glycolic acid, L-lactic acid and D-lactic acid.

136. The medicinal composition of claim 135 comprising units derived from L-lactic acid.

137. The medicinal composition of claim 121 wherein the biodegradable polymer has an average chain length of less than about 25 units.

138. The medicinal composition of claim 137 wherein the biodegradable polymer has an average chain length between about 5-20 of said units.

139. The medicinal composition of claim 138 wherein the biodegradable polymer has an average chain length between about 8-14 of said units.

140. The medicinal composition of claim 126 which is in the form of a powder.

141. The medicinal composition of claim 126 which is in the form of microparticles.

142. The medicinal composition of claim 126 which is in the form of microspheres.

143. The medicinal composition of claim 121 which is in the form of an implantable device.

144. The medicinal composition of claim 126 suitable for delivery from a dry powder inhaler.

145. A method of improving the physical and degradation characteristics of a biodegradable condensation type polymer comprising fractionating the polymer

with a supercritical fluid so as to obtain a polydispersity of less than about 1.3 and a number-average molecular weight of no greater than about 1800.

146. The method of claim 145 wherein the polymer comprises at least one chain of units of the formula -[X-R^1-C(O)]- wherein:

(a) each R^1 is an independently selected organic group that links the X group to the carbonyl group; and

(b) each X is independently oxygen, sulfur, or catenary nitrogen.

147. The method of claim 146 wherein each X is oxygen.

148. The method of claim 145 wherein the supercritical fluid is selected from the group consisting of carbon dioxide, 1,1,1,2-tetrafluoroethane, 1,1,1,2,3,3,3-heptafluoropropane, and nitrogen dioxide.

149. The method of claim 148 wherein the supercritical fluid is carbon dioxide.

150. The method of claim 145 wherein the polymer has a number-average molecular weight of no greater than about 1500.

151. The method of claim 145 wherein the polymer has a polydispersity of no greater than about 1.15.

152. A medicinal salt comprising:

(a) an ionic drug comprising at least one ammonium, sulfonate, or carboxylate group per molecule; and

(b) a biodegradable polymeric counterion comprising at least one ammonium, sulfonate, or carboxylate group and at least one chain of at least three units of the formula -[O-R^1-C(O)]- wherein each R^1 is an independently selected organic group that links the oxygen atom to the carbonyl group.

153. The medicinal salt of claim 152 wherein the biodegradable polymeric counterion and the ionic drug are present in a molar ratio of at least about 1:1.

154. The medicinal salt of claim 152 wherein the biodegradable polymeric counterion comprises at least one sulfonate or carboxylate group.

155. The medicinal salt of claim 154 wherein the biodegradable polymeric counterion comprises at least one carboxylate group.

156. The medicinal salt of claim 152 wherein the biodegradable polymeric counterion comprises at least one ammonium group.

157. The medicinal salt of claim 152 wherein the biodegradable polymeric counterion is hydrolytically degradable.

158. The medicinal salt of claim 152 wherein the biodegradable polymeric counterion has a number-average molecular weight of no greater than about 1500.

159. The medicinal salt of claim 158 wherein the biodegradable polymeric counterion has a number-average molecular weight of from about 500 to about 1000.

160. The medicinal salt of claim 152 wherein the biodegradable polymeric counterion has a polydispersity of less than about 1.3.

161. The medicinal salt of claim 160 wherein the biodegradable polymeric counterion has a polydispersity of less than about 1.15.

162. The medicinal salt of claim 152 which, when delivered to a body, exhibits sustained release of the drug.

163. The medicinal salt of claim 152 dispersed within a matrix of a second biocompatible polymer that is substantially incapable of forming a salt with the drug.

164. The medicinal salt of claim 163 wherein the second biocompatible polymer is biodegradable.

165. The medicinal salt of claim 163 wherein the second biocompatible polymer has a number-average molecular weight greater than about 1800.

166. The medicinal salt of claim 163 which is homogeneously dispersed within the matrix of the second biocompatible polymer.

167. The medicinal salt of claim 163 which is located in discrete domains within the matrix of the second biocompatible polymer.

168. The medicinal salt of claim 163 wherein the second biocompatible polymer includes at least one chain of at least three units of the formula -[X-R^1-C(O)]- wherein:

(a) each R^1 is an independently selected organic group that links the X group to the carbonyl group; and

(b) each X is independently oxygen, sulfur, or catenary nitrogen.

169. The medicinal salt of claim 168 wherein each X of the second biocompatible polymer is oxygen.

170. The medicinal salt of claim 168 wherein each R^1 of the second biocompatible polymer is a straight chain, branched chain, or cyclic organic group containing 1-6 carbon atoms optionally containing carbonyl groups, oxygen atoms, thiol groups, or catenary nitrogen atoms.

171. The medicinal salt of claim 168 wherein the second biocompatible polymer chain comprises units derived from one or more precursor hydroxyacids.

172. The medicinal salt of claim 168 comprising units derived from precursors selected from the group consisting of glycolic acid, trimethylene carbonate, hydroxybutyric acids, p-dioxanone, and lactic acids.

173. A medicinal formulation comprising a medicinal salt, the salt comprising:

(a) an ionic drug comprising at least one ammonium, sulfonate, or carboxylate group per molecule; and

(b) a biodegradable counterion comprising at least one ammonium, sulfonate, or carboxylate group and at least one chain of at least three units of the formula -[O-R^1-C(O)]- wherein each R^1 is an independently selected organic group that links the oxygen atom to the carbonyl group.

174. The formulation of claim 173 which is in the form of a solid, liquid, or semi-solid.

175. The formulation of claim 173 further comprising a propellant.

176. The formulation of claim 173 which is a sustained release formulation.

177. The formulation of claim 173 wherein the medicinal salt is substantially soluble in the propellant.

178. The formulation of claim 173 wherein the medicinal salt is substantially insoluble in the propellant.

179. The formulation of claim 173 which is suitable for oral and/or nasal inhalation.

180. A method of forming discrete particles of a medicinal formulation, the method comprising:

(a) preparing a medicinal formulation by combining components comprising:

(i) a propellant;

(ii) a biocompatible polymer substantially completely dissolved in the medicinal formulation; and

(iii) a therapeutically effective amount of a drug;

(b) placing the medicinal formulation in a device capable of generating an aerosol; and

(c) actuating the device to form an aerosol of discrete particles that are sufficiently annealed to avoid aggregation and film formation under conditions of use.

181. The method of claim 180 wherein the drug is substantially completely dissolved in the medicinal formulation.

182. The method of claim 180 wherein the biocompatible polymer is biodegradable.

183. The method of claim 182 wherein the biodegradable polymer has a number-average molecular weight of no greater than about 5,000.

184. The method of claim 182 wherein the biodegradable polymer has a number-average molecular weight of no greater than about 1800.

185. The method of claim 182 wherein the biodegradable polymer has a polydispersity of less than about 1.2.

186. The method of claim 180 wherein the biocompatible polymer and drug are each ionic and form a salt together.

187. The method of claim 180 wherein the device capable of generating an aerosol is an aerosol canister equipped with a valve.

188. The method of claim 187 wherein the aerosol canister is equipped with a metered dose valve.